

SMIRNOV, A.V.

Various diseases of the duodenum (nonneoplastic etiology) causing  
mechanical jaundice. Khirurgiia 36 no.2:3-7 F '60. (MIRA 13:12)

(DUODENUM--DISEASES)

(JAUNDICE)

SMIRNOV, A.V., zasluzhennyi deyatel' nauki prof.

Current status of the diagnosis and surgical treatment of tumors of the peri-ampullar zone (Vater's ampulla, head of the pancreas, distal segment of the choledochus, duodenum). Trudy ISGMI 59: 164-171 '60. (MIRA 14,9)

(PANCREAS--TUMORS)

(DUODENUM--TUMORS)

(BILE DUCTS--TUMORS)

SMIRNOV, A.V., prof., zaslužhennyi deyatel' nauki

Surgical treatment of obstructive jaundice caused by the growth of a malignant tumor in the extrahepatic bile ducts and in the periampullar zone. Vest.khir. 85 no.11:3-7 N '60. (MIRA 14:2)  
(JAUNDICE) (BILE DUCTS—TUMORS) (DUODENUM—TUMORS)

IVANOV, A.Ya., prof., otv.red.; AGRANOVSKIY, Z.M., prof., red.;  
 ANDREYEVA-GALANINA, Ye.TS., prof., red.; ANICHKOV, S.V., prof.,  
 red.; BABAYANTS, R.A., prof., red.; BASHENIN, V.A., prof., red.;  
 GUTKIN, A.Ya., prof., red.; KAMYSHANOV, A.F., dotsent, red.;  
 KLIONSKIY, Ye.Ye., prof., red.; RYSS, S.M., prof., red.;  
 SMIRNOV, A.V., prof., zasluzhennyy deyatel' nauki, red.;  
 TIKHOMIROV, P.Ye., prof., red.; CHISTOVICH, G.N., prof., red.

[New informative material on the methodology for sanitation of  
 the environment, and the prevention, diagnosis and treatment of  
 some diseases; results of research at the Leningrad Medical  
 Institute of Sanitation and Hygiene to assist in the practice of  
 public health] Novye informatsionnye material po metodike ozdorovleniia  
 vneshnei sredy, preduprezhdeniiu, diagnostike i lecheniiu nekotorykh  
 zabolevanii; rezul'taty nauchnykh issledovaniy LSGMI v pomoshch'  
 praktike zdravookhraneniia. Leningrad, 1961. 105 p. (Leningrad.  
 Sanitarno-gigienicheskii meditsinskii institut. Trudy, vol.73).  
 (MIRA 17:3)

1. Deystvitel'nyy chlen AMN SSSR (for Anichkov). 2. Chleny-  
 korrespondenty AMN SSSR (for Babayants, Ryss).

SMIRNOV, A.V., zasluzhennyy deyatel' nauki, prof. (Leningrad, P-22,  
naberezhnaya reki Karpovki, d.13, kv.16).

Influence of S.P.Fedorov's ideas on the development of biliary  
tract surgery in the U.S.S.R. Nov. khir. arkh. no.9:12-18 S '61.  
(MIRA 14:10)

(FEDOROV, SERGEI PETROVICH, 1869-1936)  
(BILE DUCTS--SURGERY)

SMIRNOV, A.V., prof. (Leningrad)

Pancreato-duodenal resections in tumors of the peri-ampullar  
region. Khirurgiia no.10:35-39 '61. (MIRA 14:10)  
(PANCREAS---TUMORS)

NAPALKOV, Pavel Nikolayevich; SMIRNOV, Aleksandr Vasil'yevich, zasl.  
deyatel' nauki prof.; SHRAYBER, Mark Grigor'yevich; Prinsipali  
uchastiye: ASOSKOVA, S.M.; IL'INSKAYA, O.V.; REFIN, Yu.M.; SHAFER,  
I.I.; SHMUKLER, B.A.; EL'BERG, G.A.; RUSANOV, A.A., red.; LEBEDEVA,  
Z.V., tekhn.red.

[Surgical diseases] Khirurgicheskie bolezni. Pod red. A.V. Smirnova.  
Leningrad, Medgiz, 1961. 571 p. (MIRA 15:12)  
(SURGERY, OPERATIVE)

BOGOSLAVSKIY, R.V., prof.; BREGADZE, I.L., prof.; VELIKORETSKIY, A.N.,  
prof.; VINOGRADOV, V.V., doktor med. nauk; GROZDOV, D.M., prof.;  
GULYAYEV, A.V., prof.; DZHAVADYAN, A.M., doktor med. nauk;  
KRAVCHENKO, P.V., prof.; LOBACHEV, S.V., prof.; NIKOLAYEV, O.V.,  
prof.; PYTEL', A.Ya., prof.; SMIRNOV, A.V., prof.; FAYERMAN, I.L.,  
prof.; FUTORYAN, Ye.S.; SHELAGU, A.A., zas. deyatel' nauki, prof.;  
ZOLYAN, R.O., prof.[deceased]; PETROVSKIY, B.V., prof., otv. red.;  
SENCHILO, K.K., tekhn. red.

[Multivolume manual on surgery]Mnogotomnoe rukovodstvo po khirurgii.  
Otv.red.B.V.Petrovskii. Moskva, Medgiz. Vol.8.[Surgery of the liver,  
biliary tract, pancreas, and spleen]Khirurgiia pachei, zhelchnykh  
putei, podzheludochnoi zhelezy i selebenki. Red.toma A.V.Guliaev.  
1962. 659 p. (MIRA 15:6)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Petrovskiy).  
(LIVER—SURGERY) (PANCREAS—SURGERY) (SPLEEN—SURGERY)

SMIRNOV, A.V., zasluzhennyi deyatel' nauki, prof. (Leningrad)

"Textbook of surgery". [in German] Vest. khir. 91 no.7:135-138  
Jl.'63 (MIRA 16:12)

SMIRNOV, A.V., zasluzhennyy deyatel' nauki, prof. (Leningrad, naberezhnaya Karpovki, PULATOV, A.T., dotsent d.13, kv.16)

Functional state of the adrenal cortex in patients with mechanical jaundice of different etiology in connection with surgical intervention. Vest. khir. 91 no.9:65-72 S'63. (MIRA 17:4)

1. Iz 1-y kliniki obshchey khirurgii (zav. - prof. A.V. Smirnov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

SMIRNOV, A.V., zaslužhennyy deyatel' nauki, prof.

Contemporary progress of S.P. Fedorov's ideas on surgery on  
the biliary tract. Trudy ISGMI 74:13-22 '62. (MIRA 17:10)

SMIRNOV, A. V., *zaklucheniye deyatel'nosti*; BILANENKO, I. A.

Clinical aspects in the imposition of hepatogastric (or intestinal)  
anastomoses in obstruction of intrahepatic bile ducts. Trudy ISGMI  
74:165-171 1962. (MIRA 17:10)

SMIRNOV, A.V.

Macrotome for special examination of the brain. Vop. neirokhir.  
(MIRA 18:2)  
28 no.2:54-55 Mr-Apr '64.

1. Nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znani  
institut neyrokhirurgii imeni N.N. Burdenko (direktor - prof.  
B.G. Yegorov) AMN SSSR, Moskva.

SMIRNOV, A.V., prof.; VOLKOVA, L.F., kand. med. nauk

Surgical treatment of chronic painful recurrent pancreatitis.  
Khirurgiia 40 no.4:21-24 Ap '64 (MIRA 18:1)

1. Klinika obshchey khirurgii no.1 (zav. - prof. A.V. Smirnov)  
Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																																																			
<p><b>FAIPAR</b>  <b>WOOD INDUSTRY</b>  <b>Vol. 1-1951</b>  <b>No. 1, Jan.</b></p> <p><i>A. V. Shturmov.</i>  The development of the veneer- and ply-  wood manufacture ..... 28 30</p>																																																			
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			
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1. SMIRNOV, A. V.
2. USSR (600)
4. Plywood Industry
7. Capacity reserves of plywood plants.  
Der. i lesokhim. prom. 1 No. 4, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.



SMIRNOV, A.V.

ZABRODKIN, Aleksandr Gavrilovich, kandidat tekhnicheskikh nauk, laureat  
Stalinskoy premii; KRASOVSKIY, S.P., retsenzent; LEBEDEV, V.S.,  
retsenzent; SMIRNOV, A.V., redaktor; KARASIK, N.P., tekhnicheskii  
redaktor.

[Chemistry and technology of adhesives] Khimiia i tekhnologiya  
kleevykh veshchestv. Moskva, Goslesbumizdat, 1954. 220 p.  
(Adhesives) (MLRA 7:12)

SMIRNOV, A.V., kandidat tekhnicheskikh nauk.

Manual on tools and machines for plywood and veneer production  
(Tools and machines for the production of plywood and veneers."  
V.S.Lebedev. Reviewed by A.V.Smirnov). Der.i lesokhim.prom. 3 no.5:  
30-31 My '54. (MIRA 7:6)  
(Woodworking machinery) (Lebedev, V.S.)

*St. konferentsiya po yadernykh  
i khim. prom. (Fund. Khim. i Vse Rep. Chem. Indus.)*

SMIRNOV, A.V., kandidat tekhnicheskikh nauk.

Make full use of possibilities for increasing productivity of labor  
at plywood factories. Der. i lesokhim.prom. 3 no.8:27-29 Ag '54.

(MLRA 7:8)

1. Glavfianspichprom.  
(Plywood industry)

SHUPSHTELEVICH, Vitaliy Leont'yevich; SMIRNOV, A.V., redaktor; SARMATSKAYA  
G.I.: redaktor; KOLESNIKOVA, A.P., tekhnicheskii redaktor.

[Gluing and veneering furniture parts with bone glue] Skleivanie i  
fanerovanie mebel'nykh detalei kostnym kleem. Moskva, Gosles-  
bumizdat, 1955. 78 p. (MLRA 8:8)  
(Veneers and veneering ) (Glue)

SMIRNOV, A.V.

~~SHENYDIN~~, Iosif Aronovich, kandidat tekhnicheskikh nauk; SMIRNOV, Aleksandr Vasil'yevich, kandidat tekhnicheskikh nauk; DEMIDOVA, Lidiya Aleksandrovna; RAKIN, A.G., redaktor; SIDEL'NIKOVA, L.A., redaktor izdatel'stva; KARASIK, N.P., tekhnicheskii redaktor

[Technology of wood plastics] Tekhnologiya drevesnykh plastikov.  
Moskva, Goslesbumizdat, 1956. 239 p. (MLRA 9:7)  
(Wood) (Plastics)

SMIRNOV, A.V., kandidat tekhnicheskikh nauk.

Ways of developing the plywood industry. Der.prom.5 no.4:6-9 Ap  
'56. (MIRA 9:7)

1.Glavfanspichprom.  
(Plywood)

SMIRNOV, A.V., kandidat tekhnicheskikh nauk.

Production of joinery panels in Finland. Der.prom. 6 no.1:28-29 Ja  
'57. (MLRA 10:2)

1. Glavfanspichprom.  
(Finland--Veneers and veneering)

SMIRNOV, A.V., kand. tekhn. nauk.

Veneer and match industries of the U.S.S.R. in the last forty years.  
Der. prom. 6 no.11:7-10 N '57. (MIRA 10:11)

1. Minbumdrevprom RSFSR.  
(Matches) (Veneers and veneering)

5-11 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SMIRNOV, A.V., kand. tekhn. nauk.

Wood working industry in Yugoslavia. Der. prom. 7 no.2:28-29 P '58.  
(Yugoslavia--Woodworking industry) (MIRA 11:1)

SMIRNOV, Aleksandr Vasil'yevich, kand.tekhn.nauk; ZIMIN, B.I., red.;  
SARMATSKAYA, G.I., red.izd-va; BACHURINA, A.M., tekhn.red.

[Glued plywood] Kleenaia fanera. Moskva, Goslesbumizdat,  
1959. 98 p. (MIRA 12:10)  
(Plywood industry)

BANKO, V.P.; DEMIDOVA, L.A.; ILYUSHIN, M.A.; KONDRASHKIN, Ye.P.; kand.  
tekhn.nauk; MIRKOVICH, R.A.; PLATNIKOVA, G.P.; POROKHIN, A.A., kand.  
tekhn.nauk; RUMYANTSEVA, O.M.; TEMKINA, R.Z., kand.tekhn.nauk; TI-  
KHONOV, N.F.; SHVARTSMAN, G.M., kand.tekhn.nauk; SHEYDIN, I.A.,  
kand.tekhn.nauk; SMIRNOV, A.V., red.; VOLOKHONSKAYA, L.V., red.  
izd-va; BACHURINA, A.M., tekhn.red.

[Veneerer's handbook] Spravochnik fanershchika. Vol.2. 1959.  
333 p. (MIRA 13:3)

1. Tsentral'nyy nauchno-issledovatel'skiy inatitut fanery i mebeli.  
(Veneers and veneering)

SMIRNOV, A.V.

Development of the plywood industry during the period 1959-  
1965. Der.prom. 8 no.2:1-3 F '59. (MIRA 12:2)

1. Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov  
RSFSR.

(Plywood industry)

SMIRNOV, A.V.

Developing the production of fibrous hardboards. Der.prom. 8  
no.6:12-14 Je '59. (MIRA 12:8)

1. Gosudarstvennaya nauchno-tekhnicheskaya komissiya Soveta  
Ministrov SSSR.

(Hardboard)

SMIRNOV, A.V., kand.tekhn.nauk

Introduction of new equipment and technology is one of the main tasks of the 1960 plan. Der.prom. 9 no.4:1-4 Ap. '60.

(MIRA 13:9)

1. Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov RSFSR.

(Woodworking industry)

NEKHAY, Stepan Matveyevich; KHABAROV, Valentin Ivanovich; ~~SMIRNOV, A.V.~~  
red.; AZAROVA, V.G., red. izd-va; LOBANKOVA, R.Ye., tekhn. red.

[Power presses for the manufacture of particle boards] Pressy dlia  
struzhechnykh plit. Moskva, Goslesbumizdat, 1961. 76 p.

(MIRA 15:2)

(Hardboard)

(Power presses)

SMIRNOV, Aleksandr Vasil'yevich, kand. tekhn. nauk; SMOLENSKIY, K.I.,  
nauchnyy red.; ALESHINSKIY, N.A., nauchnyy red.; KRUGLOV, S.A.,  
red.; KOZLOVSKAYA, M.D., tekhn. red.; TOKER, A.M., tekhn. red.

[Operator of the veneer peeling machine in the plywood and  
veneer industry] Lushchil'shchik v fanernom proizvodstve. Mo-  
skva, Proftekhizdat, 1961. 168 p. (MIRA 15:6)  
(Woodworking machinery) (Veneer and veneering)

SMIRNOV, Aleksandr Vasil'yevich; SMOLENSKIY, K.I., red.; VOLOKHONSKAYA, L.V.,  
red. izd-va; LOBANKOVA, R.Ye., tekhn. red.

[Technology and mechanization of plywood manufacture] Tekhnologiya i  
mekhanizatsiia fanernogo proizvodstva. Moskva, Goslesbumizdat,  
1961. 367 p. (MIRA 14:11)

(Playwood industry)

SMIRNOV, A.V., red.; VOLOKHONSKAYA, L.V., red. izd-va; BACHURINA,  
~~A.M.~~, tekhn. red.

[Veneering handbook] Spravochnik fanershchika. Izd.2. Mo-  
skva, Goslesbumizdat. Vol.1. 1961. 522 p. (MIRA 15:2)

1. Tsentral'nyy nauchno-issledovatel'skiy institut fanery i  
mebeli.

(Veneers and veneering)

SMIRNOV, A.V.

Some results of the fulfillment of the plan for the introduction of new equipment and technology during 1960 and tasks set for 1961.  
Der.prom. 10 no.2:1-3 F '61. (MIRA 14:3)

1. Gosudarstvennyy nauchno-tekhnicheskiiy komitet Soveta ministrov RSFSR.

(Wood-using industries)

SMIRNOV, A.V., kand.tekhn.nauk

New Plywood Combine in Rumania, Der. prom. 10 no.6:26-28  
Je '61. (MIRA 14:7)  
(Rumania--Plywood industry)

SMIRNOV, A.V.

State of the plywood industry on the eve of the 22d Congress of  
the CPSU. Der.prom. 10 no.9:6-8 S '61. (MIRA 14:10)

1. Gosudarstvennyy komitet Soveta Ministrov RSFSR po koordinatsii  
nauchno-issledovatel'skikh rabot.  
(Plywood industry)

KOTLYAREVSKIY, K.V.[deceased]; KOTLYAREVSKAYA, G.A.; SMIRNOV, A.V.,  
red.; SHENDAREVA. L.V., tekhn. red.; MILIKESOVA. I.F.,  
tekhn. red.

[Economical expenditure of veneer] Ratsional'nyi raskhod stro-  
ganoi fanery. Moskva, TSentr.in-t tekhn. informatsii i eko-  
nomicheskikh issl. po lesnoi, bumazhnoi i derevoobrabatyvaiu-  
shchei promyshl., 1962. 43 p. (MIRA 16:9)  
(Veneers and veneering)

DENISENKO, Vladimir Vasil'yevich; SMIRNOV, A.V., red.; BASINKEVICH,  
I.R., red.izd-va; KARLOVA, G.L., tekhn. red.

[Using wooden sliding-friction parts in machinery]Primenenie  
v mashinakh drevesnykh detalei skol'ziashchego trenia. Mo-  
skva, Goslesbumizdat, 1962. 67 p. (MIRA 16:3)  
(Machinery industry) (Wood, Compressed)

SMIRNOV, A.V.

Let's speed up the progress of woodworking industries. Der.prom.  
11 no.5:1-3 My '62. (MIRA 15:5)

1. Gosudarstvennyy komitet Soveta Ministrov RSFSR po koordinatsii  
nauchno-issledovatel'skikh rabot.  
(Woodworking industries)

SMIRNOV, Aleksandr Vasil'yevich, kand. tekhn. nauk; BURKOV, V.I.,  
red.; NIKITINA, L.V., red.izd-va; KUZNETSOVA, A.I., tekhn.  
red.

[Prospects for the development of the veneer and match industries  
during the period from 1959 to 1965] Perspektivy razvitiia fandr-  
noi i spichechnoi promyshlennosti v 1959 - 1965 gg. Moskva, Gos-  
lesbumizdat, 1960. 31 p. (MIRA 16:4)  
(Plywood industry) (Match industry)

SVITKIN, M.Z.; ZAVRAZHNOV, A.M.; SMIRNOV, A.V., red.; PETRENKO,  
V.M., tekhn. red.

[Production of particle boards by the extrusion method]  
Proizvodstvo struzhechnykh plit ekstruzionnym sposobom.  
Moskva, TSentr. in-t tekhn. informatsii i ekonom. issledo-  
vaniy po lesnoi, bumazhnoi i derevoobrabatyvaiushchei  
promyshl., 1962. 50 p. (MIRA 17:3)

1. Cherepovetskiy zavod "Fanerodetal'" (for Zavrazhnov).

YAGODKIN, N.N.; SMIRNOV, A.V., nauchn. red.

[Production of particle boards and the study of their properties in Finland] Proizvodstvo struzhechnykh plit i issledovanie ikh svoistv v Finliandii. Moskva, TSentr. in-t tekhn. informatsii i ekon. issledovaniy po lesnoi, bumazhnoi i derevoobrabatyvaiushchei promyshl., 1963. 59 p.

(MIRA 17:4)

1. TSentral'myy nauchno-issledovatel'skiy institut fanery i mebeli.

VINIK, P.A.; SMIRNOV, A.V., nauchn. red.

[Organization of workshops for the production of rotary-cut veneer and plywood at woodworking and lumbering enterprises] Organizatsiia tsekhov po proizvodstvu shpona i fannery pri derevoobrabatyvaiushchikh i lesozagotovitel'nykh predpriiatiakh. Moskva, TSentr. nauchno-issl. in-t informatsii i tekhniko-ekon. issledovaniy po lesnoi, tselliulozno-bumazhnoi, derevoobrabatyvaiushchei promyshl. i lesnomu khoz. 1964. 26 p. (MIRA 17:12)

VINNIK, Nikolay Iosifovich; KORYSTIN, Lev Nikolayevich; A. BRNOV,  
L.V., red.

[Industrial production of compressed wood] Promyshlennoe  
proizvodstvo pressovannoi drevesiny. Moskva, Izd-vo  
"Lesnaia promyshlennost," 1964. 137 p. (MIRA 17:5)

SMIRNOV, A.V.

Some problems in planning large plywood producing enterprises.  
Der. prom. 14 no.7:1-4 J1 '65. (MIRA 19:1)

SMIRNOV, A.V., kandidat tekhnicheskikh nauk.

Some characteristics of the performance of a deep, open canal in  
peaty soils. Gidr.i mel.6 no.4:24-29 Ap '54. (MLRA 7:5)  
(Drainage)

SMIRNOV, Aleksey Vladimirovich, kandidat tekhnicheskikh nauk; KOREYSHO,  
Ye.G., redaktor; ~~PERESTIPKINA~~, Z.D., tekhnicheskii redaktor;  
ZUBRILINA, Z.P., tekhnicheskii redaktor

[Drainage and utilization of flood lands] Osushenie i osvoenie  
poimennykh zemel'. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956.  
94 p. (MLRA 10:1)

(Alluvial lands)

15-57-3-3402

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 3,  
p 136 (USSR)

AUTHOR: Smirnov, A. V.

TITLE: Sapropel Reserves of Nero Lake; an Experiment on Using  
Sapropel as Soil Conditioner, and Methods of Productive  
Extraction (Zapasy sapropeley ozera Nero, opyt ikh  
ispol'zovaniya na udobreniye i sposoby proizvodstvennoy  
dobychi)

PERIODICAL: Tr. Labor. sapropel. otlozheniy. In-t lesa AN SSSR,  
1956, Nr 6, pp 201-213

ABSTRACT: The store of sapropel in Lake Nero amounts at least to  
250 million m<sup>3</sup>. Agricultural field experiments and  
chemical analyses show it to have a high value as a  
soil conditioner in agriculture. The content of humus  
(from 3 to 17 percent) and of calcium (from 10 to 32  
percent) makes it especially valuable for conditioning  
podsol and gley soils.

V. F. Ye.

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SMIRNOV, ALEKSEY, VLADIMIROVICH

SMIRNOV, Aleksey Vladimirovich, kand.tekhn.nauk; NEFEDOV, Vasilii Dmitriyevich, inzh.; ORLOVA, V.P., red.; ZUBRILINA, Z.P., tekhn.red.; GUREVICH, M.M., tekhn.red.

[Reconstruction of drainage systems] Pereustroistvo osushitel'nykh sistem. Moskva, Gos.izd-vo sel'khoz. lit-ry, 1957. 109 p.  
(Drainage) (MIRA 11:2)

SPRINCO, S. L.

SHIRKOV, A.V., Kandidat tekhnicheskikh nauk.

Use of lake sapropels for fertilizer. Zenladelic 5 no. 9:36-8:  
S '57. (MIRA 10:9)

(Sapropels) (Fertilizers and manures)

SMIRNOV, V. A.

"Notes on Determining the Degree of Susceptibility of an Area to Drought." p.135

with Malyugin, Ye. A., and Shakhnovich, A. V., "Changes in the Local Climate and Moisture Cycles of Cultivated Areas as a Result of Irrigation Conducted to Combat Drought." p. 116.

in book, Droughts in the USSR, Their Origin, Frequency, and Effect on Crops, Leningrad, Gidrometeoizdat, 1958, 206p.

Agrometeorological Div, All-Union Plant Cultivation Inst.

SITKOVSKIY, P.A.; KOMAROV, G.V.; BRUSENTSEV, V.F.; KREMENETSKIY, N.N.;  
MAMAYEV, M.G., kand.tekhn.nauk; SMIRNOV, A.V., kand.tekhn.nauk;  
AFANAS'YEV, I.V.; VOLOD'KO, I.F., kand.tekhn.nauk; BEGLYAROV, S.A.;  
KONDRAT'YEV, V.V.; KARLINSKAYA, M.I.; NIKOLAYEV, M.I., kand.tekhn.  
nauk; DOROKHOV, S.M.; PISHCHUROV, P.V.; KLIMENTOVA, A.V.; ROZENBLAT,  
Zh.I.; FANDEYEV, V.V., kand.tekhn.nauk; KULIKOV, P.Ye.; SHIMANOVICH,  
S.V.; DELITSIN, M.V., retsenzent; BRAUDE, I.D., retsenzent; BARYSHEV,  
A.M.; retsenzent; GRIGORYANTS, A.S., retsenzent; IGNATYUK, G.L.,  
retsenzent; KALABUGIN, A.Ya., retsenzent; KREMENETSKIY, N.D.,  
retsenzent; POPOV, K.V., retsenzent; ORLOVA, V.P., red.; LETNEV,  
V.Ya., red.; SOKOLOVA, N.N., tekhn.red.; FEDOTOVA, A.F., tekhn.red.

[Handbook for hydraulic and agricultural engineers] Spravochnik  
gidrotekhnika melioratora. Moskva, Gos.izd-vo sel'khoz.lit-ry,  
1958. 766 p. (MIRA 12:3)  
(Hydraulic engineering) (Agricultural engineering)

SMIRNOV, A.V., kand.tekhn.nauk

From the history of land reclamation in the territory of Moscow.

Gidr.i mel. 13 no.7:55-60 JI '61.

(MIRA 14:7)

(Moscow--History)

SMIRNOV, A.V., kand. tekhn. nauk

Depth for the laying of drains. Gidr. i mel. 17 no.2:41-47 F '65.  
(MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i  
melioratsii im. A.N.Kostyakova.

YARIKOV, G.M.; SMIRNOV, A.V.

Paleogeography and sedimentation in the Early Vise in the Volga Valley  
portion of Volgograd Province. Geol. nefti i gaza 9 no.9:36-41 S '65.  
(MIRA 18:9)

ca 9

Practical instructions for nitriding steel. O. I. VER AND A. V. SMIRNOV. *Sovetskoye Vsesoyuznoye Inst. Metal.* 1931, Nov. 12, 17, 22. Instructions for nitriding steel with  $NH_3$  are given and also details of the furnace and microphotographs of samples. The temp. should be around 490-510°, pressure of  $NH_3$  not over 10 mm. in an air tight furnace and rate of flow of gas such that 30% of the  $NH_3$  dissociates. The period of nitration is about 50 hrs. Heat treatment, annealing and polishing of surface of objects should all precede nitration. Cooling after nitration should take place slowly in the furnace itself in a stream of  $NH_3$ . The  $NH_3$  should be dried over unslaked lime or solid NaOH. Spots on the surface not to be nitrated should be tinned with a 50:50 Pb:Sn coat.

S. L. MAIDORNSKY

AYR 514 METALLURGICAL LITERATURE CLASSIFICATION

LIST AND INDEX ORDERS																									
PROCESSES AND PROPERTIES INDEX													STRUCTURAL INDEX												
<p><i>ca</i></p> <p>The nature of flakes (white spots of minute cracks) in connection with an investigation of turbine disks. A. L. BAROSHIN, A. V. SMIRNOV, A. P. TULYAKOV AND A. I. NOM-MARK. <i>Sootskheniya Vsesoyuznogo Inst. Metal.</i> 1931, Nos. 3-4, 27-30.—Flakes, or white spots of minute cracks, found inside and on the surface of Ni-Cr, Ni and Cr steel products are the principal defects responsible for the rejection of 50% or more of turbine disks. An attempt was made to interpret the nature of these flakes and to find means for their combat. The study was made along the lines of chem. analysis, macrostructure of fracture, microstructure of the steel, mech. properties, critical points and effect of individual chem. elements on dendritic segregations. It is concluded that the flakes are closely related to the dendritic inclusions. Strains form along dendritic axes and in the interaxial spaces during the critical temp. interval of cooling and later cause the minute cracks or flakes. This difficulty can be overcome by a proper control of the cooling soon after casting or during and after forging.</p> <p>S. L. MADORSKY</p>																									
<p>ASME-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>1304.517.111.111</p>																									

Handwritten: *CR* (top left) and *9* (top right)

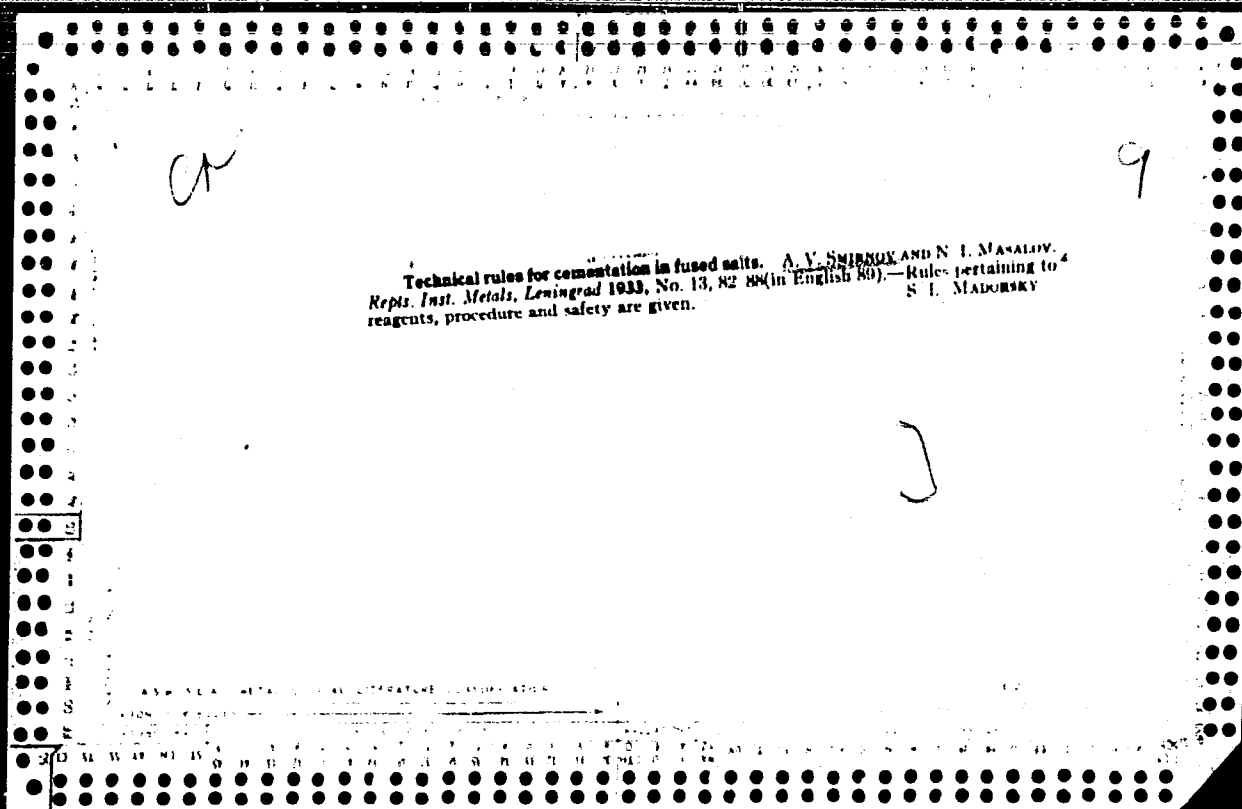
PROCESSES AND PROPERTIES

An investigation of nitralloys of Soviet manufacture. O. I. VERK, A. V. SMIRNOV AND I. F. AFONSKII. *Sootskhenniya Vsesoyuznogo Inst. Metal.* 1931, Nos 3-4, 37-43. Steel having the compn. C 0.40, Si 0.48, Mn 0.42, Cr 2.31, Al 1.47, Mn 0.34, Ni 0.83, S 0.03 and P 0.028% was investigated with the view of using it in the manuf. of nitrided tools. Mech. properties and microstructure were studied. This work will be continued. S. L. MADORSKY

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1304-317-3114

1304-317-3114



**Axles and fixed pivots for alarm clocks.** A. V. Smirnov and N. I. Masalov. *Repts. Inst. Metals* (Leningrad) No. 15, 79 (1951) (in English 100) (IREB).-- The processes of hardening of Cr steel axles in cyanide salts and of nitriding Cr-Al steel fixed pivots were investigated. Details of the process are given. S. I. Maslov (Ky.)

ASH-364 METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND CODES		PROCESSING AND PROPERTY INDEX		3RD AND 4TH CODES	
<p>Preparation of emulsions for reversal. K. S. Lyalikov and A. V. Sushin. <i>Photo-Kemo Khim. Ind.</i> 1934, No. 2, 22-30. — It is concluded that: (1) Ordinary photographic emulsions of high sensitivity are not suitable for reversal since they give too high a fog in the positive. (2) Dilm. of the emulsion before coating improves the reversal image. (3) Dilm. of the emulsion with gelatin soln. has the same effect as dilm. with <math>H_2O</math>. (4) An increase in the concn. of bromide and Ag in the mix increases the positive fog. (5) The second ripening of the emulsion, after washing, has no effect upon the reversal characteristic. (6) KI added to the finished emulsion tends to increase the positive fog. (7) The mixing of emulsions of high and low sensitivity with corresponding difference in the grain size gives satisfactory results. Practical formulas for the manuf. of suitable emulsions of the NH<sub>1</sub> type are given. The sensitizers suggested are pinaeyanol, orthochrome T, pina-verdol and pinaflavol. C. E. K. Mees</p>					
<p>ASB-11.1 METALLURGICAL LITERATURE CLASSIFICATION</p>					

PROCESSING AND PROPERTIES INDEX																									
1ST AND 2ND GROUPS													3RD AND 4TH GROUPS												
1ST GROUP													2ND GROUP												
3RD GROUP													4TH GROUP												
<p>Deep nitriding. A. V. Smirnov and L. V. Belovuchev. <i>Repts. Central Inst. Metals (Leningrad)</i> No. 16, 127-33 (in German 133)(1934).--Three grades of steel were subjected to a nitriding process. Composn. of the steels was: (1) 0.54 C, 0.58 Mn, 1.45 Cr, 0.07 V, 0.00 Mo, 0.02 Al; (2) 0.39 C, 0.50 Mn, 1.40 Cr, 0.11 V, 0.24 Mo; (3) 0.74 C, 0.40 Mn, 1.78 Cr and 0.35 Al. The following nitriding method was used. After passing through a thermal treatment, the samples were placed in a nitriding elec. oven and heated first at 500° for 48 hrs. After this the temp. was varied cyclically every 5 hrs. between 540 and 600°, for a total period of 48 hrs. Finally the temp. was varied cyclically every 6 hrs. between the same temp. limits, for a total period of 100 hrs. At these temp. variations disocn. of NH<sub>3</sub> reached 8-10% at the lower temp. and 50-60% at the upper. The nitride coat thus obtained was on the av. 1.19, 1.48 and 1.15 mm. thick for the steels (1), (2) and (3). This shows that the sinusoidal method gives a deep nitrided coat, but at the same time it lowers the hardness of the treated samples.</p> <p>S. L. Madorsky</p>																									
<p>ASME 1.1.1 METALLURGICAL LITERATURE CLASSIFICATION</p>																									

**Manufacture and properties of steel wire** A. I. Baboshin, A. V. Smirnov and N. I. Maslov. *Izvestia Metalloprod.* 15, No. 4, 23 (44) (1962); *Chem. Zvesti* 1930, 1, 1690. Studies are reported on the influence of the degree of deformation and the heat treatment on the structure, the mech. properties and the resistance to corrosion of steel wire drawn from 18 to 1.4 mm. diam. and of the following composition: one specimen 0.37% C, 0.23% Si, 0.28% Mn, 0.33% P, 0.032% S, 0.022% Cu, 0.005% Nb, 0.008% P; another 0.65% C, 0.18% Si, 0.37% Mn, 0.011% P, 0.017% S, and 0.015% Cu. Of the mech. properties tensile strength, resistance to shock, bending strength, resistance to torsion, fatigue strength and the elastic limit were investigated. On the basis of the expl. results it is recommended that in drawing the deformation should not exceed 75%, and that a final heat treatment at 250-300° increases the resistance to shock. The torsion strength cannot be concluded from the results of tests of bending strength; each test must be made independently. The torsion test detects defects due to too great deformation during drawing, while the bending test is a test of the plastic properties of the material.

At 6:45 p.m.

ASAC-5LA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<div style="display: flex; justify-content: space-between;"> <span>5</span> <span>17</span> </div> <p>*Bi-Metal Annealing in Ammonia Gas. A. V. Smirnov and L. V. Beloruchev (Metallurg (Metallurgist), 1988, (9), 79-80).—[In Russian.] Annealing of Tombak bimetal in moist ammonia at 640° C. gave a perfectly satisfactory surface appearance and degree of softness without producing hydrogen embrittlement.—N. A.</p>																			
ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION																			
MATERIALS INDEX										COMMON VARIANTS INDEX									
OPEN										CLOSED									
SEARCHED										SERIALIZED									
INDEXED										FILED									
JAN 1989										JAN 1989									

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>5</p> <p>CONTROLLED ATMOSPHERE IN HEAT-TREATMENT FURNACES. A. V. Smirnov. (<i>Kachestvennaya Stal</i>, 1957, No. 8, pp. 6-9). (In Russian). The author reviews modern methods of obtaining a controlled natural or synthetic atmosphere for use in heat-treatment furnaces. The fundamental principles involved in the production of gas mixtures of a particular composition either inside the furnace or in separate heating equipment are discussed. In conclusion he considers the gas mixtures which are suitable for the prevention of decarburisation and oxidation, and for cementation and nitriding purposes.</p> <p>10</p>																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																			
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									

PROCESSING AND PROPERTY INDEX																									
PROCESSING INDEX													PROPERTY INDEX												
PROCESSING INDEX													PROPERTY INDEX												
<p><i>Ca</i></p> <p><u>Hydrogen in steel and other alloys. A. Y. Saitov</u>  <u>Metallurg 12, No. 6, 48-50 (1967).</u> Only at H can dif-            fuse in steel at room temp. Si in steel promotes diffusion            owing to formation of unstable SiH, which yields at H.            H. W. Rathmann</p> <p><i>9</i></p>																									
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																									

14

7

Selection of steel for autoclaves in contact with alkali at high temperatures. A. V. Suminov, *Khim. Mashinostroyeniye* 1938, No. 2, 22-30. Various steels, soft Fe, Fe-Ni and monel were tested at 200° under a pressure of 12 atmos for periods of 150 hrs. The best results were obtained with Fe-Ni contg. < 0.10 C, 0.40-0.60 Mn, 0.15-0.30 Si, < 0.020 S, < 0.030 P, 1.75-5.25 Ni and < 0.25 Cr.

S. L. Madorsky

ASME-STEEL METALLURGICAL LITERATURE CLASSIFICATION

SECTION SYMBOLS

SECTION SYMBOLS

SECTION SYMBOLS

SECTION SYMBOLS

STEELS STABLE UNDER CONDITIONS OF AMMONIA SYNTHESIS.

A. V. Smirnov. *Khim. Mashinostroyeniya* 1938, No. 4, 34-42; *ibid.* 1932-4730. - In a series of anticorrosion tests, various samples of Fe and its alloys, such as Armeo Fe, Cr-Fe, Cr-W-Fe and Cr-W-Mo-Fe were placed inside an  $\text{NH}_3$ -producing app. under operating conditions. The best results were obtained with a sample analyzing C 0.29, Si 0.50, Mn 2.20, S 0.013, P 0.021, Cr 8.76, W 3.04 and Ni 57.24%. Under a pressure of 7.50 atm. at 575° the metal remained intact after 910 hrs. Next to this were in the order given (1) Cr-Mo analyzing C 0.07, Si 0.20, Mn 0.27, S 0.026, P 0.024, Cr 5.87, Mo 0.81%;

(2) Cr-Mo-W analyzing C 0.22, Si 0.42, Mn 0.70, S 0.021, P 0.032, Cr 3.00, Mo 1.02, W 0.72% and (3) steel analyzing C 0.10, Si 0.19, Mn 0.76, S 0.014, P 0.031, Cr 5.32, Mo 0.60 and Al 1.20%.

S. L. Madorsky

1ST AND 2ND ORDER																										3RD AND 4TH ORDER																									
COMMON ELEMENTS																										COMMON VARIABLES																									
<p><i>Ca</i></p> <p>Steel suitable for the synthesis of ammonia. A. V. Smirnov. <i>J. Chem. Ind. (U. S. S. R.)</i> 15, No. 2, 308 (1938).—The best steel for app. for <math>\text{NH}_3</math> synthesis at 500° and 750 atm. contains 0.3% C, 0.0% Cr and 0.5% Mo. If somewhat greater heat resistance is required the Mo should be increased to 1.02%, and 0.72% W should be added. Alloys contg. Ni 60%, Cr 0%, W 3% and Mo 2% are also very stable. H. M. Leicester</p> <p>18</p>																																																			
<p>ASST. S. L. A. METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

ea 9

Materials for the teeth in pyrite furnaces. A. V. Sourinoy. *J. Chem. Ind. (U. S. S. R.)* 15, No. 8, 59 (1968). The strongest material is Fe contg. Cr.  
H. M. Leicester

ASME 3.4 METALLURGICAL LITERATURE CLASSIFICATION

**Resistance of nitrided steels in gases.** A. V. Smirnov and A. P. Khlopov. *Khim. Mashinostroenie* 8, No. 5, 26 8 (1959).—An investigation was made of the wear resistance of two nitrided steels under conditions approaching the service of rods of compressors and pumps which handle  $\text{NH}_3$ , soda and other heavy chemicals. The following steels were tested: (1) C 0.34, Si 0.30, Mn 0.51, S 0.010, P 0.025, Cr 1.19, V 0.13, Mo 0.36, Ni 0.11%; and (2) C 0.30-0.38, Si 0.10, Mn 0.3-0.6, S 0.025, P 0.025, Cr 1.4-1.6, Al 0.8-1.2, Mo 0.40-0.60, Ni 0.50%. The nitriding was done in the usual manner for 8 hrs. at  $500^\circ + 8$  hrs. at  $550^\circ$ . The nitrided specimens were then kept in an elec. oven at  $200^\circ$  for 10 hrs. and subjected to the action of air,  $\text{H}_2$ ,  $\text{N}_2$ ,  $\text{CO}_2$ , coke gas, and  $\text{NH}_3$  (90% cracked), which were passed through the oven at the speed of 1 l./min. The specimens were then tested for wear resistance in an Amsler app. The results show that the 16-hr. nitriding process produced a 0.09-0.120 mm. layer which exceeded the wear of the rod by 4-6 times. Of the various gases only  $\text{CO}_2$  and coke gas decreased the surface hardness of the nitrided layer, but the specimens did not show increased wear. The nitrided specimens which were treated with oxidizing gases gave in most cases less wear than for reducing gases. The nitrided steel (2) was 1.5 times more resistant to wear than steel (1). Both steels (1) and (2) are considered suitable for the manuf. of pump and compressor rods. B. Z. Kamich

**H. Z. Kamich**

PROCESS AND PROPERTIES INDEX																									
1ST AND 2ND DIMENSIONS													3RD AND 4TH DIMENSIONS												
<p>Selection of steel for autoclaves used for thermal treatment of peat. A. V. Smirnov and F. P. Azbelev. <i>Khim. Mashinostroenie</i> 1940, No. 2, 18-21; <i>Khim. Referat. Zhur.</i> 1940, No. 8, 136-7.—The dil. soln. of humic and volatile acids that attacks the lower part of the autoclave is more corrosive than is the gaseous mixt. of water vapor, volatile acids and CO in the upper part. The ST-3 steel is very stable and can be used as standard for comparison with other materials. The slightly alloyed and more corrosion-resistant steels are the Cr-Cu steel SDS and the less-expensive Mn-Cu steel MS. An inner bakelite film is effective in all cases.</p> <p style="text-align: right;">W. R. Henn</p>																									
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																									

CA

9

Search for methods of decreasing the burning of typographic alloys. A. V. Smirnov, E. A. Al'tan, and E. N. Golosova. *Poligraf. Proizvodstvo* 1951, No. 9, 25-8.—  
In order to reduce the phys. loss of type alloys via gradual

oxidation and volatilization, while still retaining the desired characteristics, the following experimentally detd. methods can be applied. If the melting temp. is below 320-40° low vapor pressure bitumens and petroleum residues can be used as protective cover for the alloys. In the range 280-400° a mixt. of  $ZnCl_2$  with 4%  $NH_4Cl$  is satisfactory, while at 300-400°  $ZnCl_2$  mixts. with  $MgCl_2$  or  $CaCl_2$  are advantageous. Immersion of wood into the melts can be recommended only in combination with the salt covers listed above, or combined with a "floating lid" made of steel or cast iron which can be adjusted for different heights in the melt pot.  
G. M. Kosolapoff

Smirnov, A.V.

Nitriding commercially pure iron to a high hardness.  
A. V. Smirnov. *Vestnik Mashinostroyeniya* 32, No. 12, 43-6 (1985). Max. hardening of nitrided Fe is produced when N-bearing martensite formed after quenching contains less than 2.7% N. In conventional nitriding, N<sub>2</sub> content on the surface is always higher than 2.7%; this leads to the soft epsilon phase. The thickness of the epsilon phase could not be reduced by nitriding at 700° in dil. NH<sub>3</sub>. The martensitic layer remained as before and the epsilon phase layer increased with longer nitriding time. Holding the epsilon phase in H<sub>2</sub> + N<sub>2</sub> for ten min. at 700° dissolved it completely, leading to hardness of 755 and martensite surrounded by an easily etchable dark phase resembling troostite, apparently a ferrite-nitride mixt. produced by the decompn. of N-poor austenite. The epsilon phase is easily decompd. by H<sub>2</sub>, and austenitic grains on the surface become impoverished in N and lose their capability for undercooling, becoming transformed on quenching into finely dispersed  $\alpha$  and  $\gamma$  iron mixt. having a hardness of 755 as compared with 317 for the epsilon phase. A 20-min. hydration increases the development of the  $\alpha$ - $\gamma$  phase and after 30 min. it penetrates into the original martensitic zone, raising its hardness to 1070. After 45 min. the epsilon phase is transformed to ferrite having a hardness of 206. J. D. Cat

Smirnov, A. V.

2

Smirnov, A. V.: Goryachee tsinkovanie (Hot Galvaniz-  
ing). Moscow: Gosudarst. Nauch.-Tekh. Izdatel'stvo Lit.  
po Chernoi i Tsvetnoi Met. 1963. 284 pp.

SHIRENOV, A.V.

Nitriding of technically pure iron to a high hardness. A. V. Shirenov, *Zhur. Tekh. Fiz.* 23, 1400-10 (1953); cf. *ibid.* 24, 1022. Since the highest microhardness is shown after quenching by a nitrated martensite phase with a N content of less than 2.7%, a process has been worked out to obtain such a phase on the surface. The free energies and reaction consts. of various reactions involving  $\alpha$ - and  $\gamma$ -Fe, nitrides,  $\text{NH}_3$ , and dissolved and free N are tabulated. From these data it is shown that a solid soln. of N in  $\alpha$ -Fe is formed at  $705^\circ$ , in  $\gamma$ -Fe at  $289^\circ$ ;  $\text{Fe}_4\text{N}$  is formed at  $320^\circ$ ,  $\text{Fe}_2\text{N}(\epsilon)$  at any temp., and  $\text{Fe}_3\text{N}(\epsilon)$  at  $409^\circ$ . The first, second, and last phases are metastable at room temp. in absence of  $\text{NH}_3$ , the third and fourth are stable. A decrease of  $\text{NH}_3$  pressure by diln. with a neutral gas suppresses the reactions leading to the formation of the  $\epsilon$ -phase. Tests were made with an  $\text{NH}_3$  content varying from 10 to 100%. It is shown that at lower partial pressures of  $\text{NH}_3$  (below 10%) or decreased dissoen. (below 85%), the diffusion of Fe and N leads to the formation of phases low in N at the surface. S. formed the  $\epsilon$ -phase on the surface by nitriding at  $700^\circ$  in a mixt. contg. 17%  $\text{NH}_3$ , then heated the product in a fully dissoed. mixt. for 10-75 min. and quenched in  $\text{H}_2\text{O}$ . A max. of microhardness was observed after a treatment of 30 min. If the temp. during nitriding is raised, the  $\epsilon$ -phase disappears at  $775^\circ$ , an austenite phase at  $825^\circ$ , and the N content is depleted completely at  $875^\circ$  and  $925^\circ$ . Thus, high microhardness on the surface can be obtained at higher temps. than  $700^\circ$ . S. Pakswar

SMIRNOV, A. V.

~~Decaling~~ by Reduction with Sodium Hydride. A. V. 3  
Smirnov, S. A. Semenkovich and F. A. Hlogachev. (Vestnik  
Mashinostroeniya; 1953, 23, (3) 37-39). After a thermo-  
dynamic discussion the decaling process with hydrogen in  
a sodium hydroxide melt is described, and the results and  
economics of the process are discussed.

df

SMIRNOV, A.V.

7  
3  
Drying and grinding catalysts in vacuo  
and S. S. Golovaya. U.S.S.R. 101,640, Dec. 31 1963  
hydrogenation catalyst is dried and powdered  
in oil at 80-90° with stirring. The vacuum apparatus  
with a stirrer and heating coil. M. Hecce

mm  
mt

SMIRNOV, A. V.

~~Drying and grinding of a catalyst in oil in vacuum. S. S. Golynya and A. V. Smirnov. *Mashinostroitelno-Zhironaya Prom.* 20, No. 8, 35-8 (1955).—An app. for simultaneous vacuum drying and grinding of a catalyst suspended in oil is described, and experience gained in its operation is discussed. Vladimir N. Krukovsky~~

①

129-2-9/10

AUTHOR: Mishkevich, R.I., Candidate of Technical Sciences,  
Solntsev, P.I., Eng., and Smirnov, A.V. Dr. of Technical  
Sciences.

TITLE: Low Temperature Nitriding of Structural Steel. (Nizkotemperturnoye  
azotirovaniye konstruktsionnoy stali).

PERIODICAL: Metallovedenie i obrabotka metallov, 1957, No. 2, pp. 49-54  
(U.S.S.R.)

ABSTRACT: The experimental work was carried out by engineer R.V. Chudnovskaya  
and four assistants. The authors investigated the possibility  
of utilizing a nitriding process at a temperature below 400 C.  
As a result to the experiments described a low temperature catalytic  
process of nitriding at 380°C (60 to 80 hours) and 430°C (24 hours)  
was developed which permits obtaining a Rockwell C hardness of 42 to  
50 on structural alloy steel for a layer depth of 0.20 to 0.25 mm;  
there is a steep decrease in the hardness from the surface towards  
the core. By using the nitriding processes described here, the  
development of Type II temper brittleness in nitrided components is  
eliminated and the obtained nitrided layer is free of any brittleness  
usually encountered on such layers in 38XMoA steel. The process

Card 1/3

129-2-9/10

**TITLE:** Low Temperature Nitriding of Structural Steel. (Nizkotemperturnoye azotirovaniye konstruktsionnoy stali).

described here is used in a number of Soviet factories and two of the authors of this paper have an "author's certificate" for this process. Fig. 2 gives the change of the hardness and depth of the nitrided layer as a function of nitriding processes (380, 430 and 480°C with catalysts and 530 and 580°C without catalysts) for four different steels. Fig. 3 gives the change of the micro-hardness along the cross section of the nitrided layer as a function of the nitriding process for 35XMA steel for equal nitriding processes. Table 1 contains literary data on changes of certain parameters during the reactions. Table 2 gives the Cr content with depth of the nitrided layer for the 35XH3M steel. Table 3 gives hardness of the nitrided layer in the 15N scale as a function of the temperature and the holding time during nitriding.

Card 2/3

The text includes 4 sets of graphs, and 3 tables. There are 5 references, all Russian.

SOV/137-57-10-20189

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 254 (USSR)

AUTHORS: Gordiyenko, P.L., Smirnov, A.V.

TITLE: The Resistance of Metastable Nitrous Phases to Wear and Corrosion  
(Stoykost' metastabil'nykh azotistyykh faz protiv iznosa i korrozii)

PERIODICAL: Tr. Leningr. in-ta aviats. priborostr., 1957, Nr 22, pp 23-28

ABSTRACT: Samples of technically pure Fe are nitrided and then quenched in various ways to produce nitrous surface phases, and are then tested for wear (W) on the Gordiyenko machine and for corrosion in 3% NaCl solution. The tests showed that a mixture of nitrous austenite and nitrous martensite has little W resistance, but that a martensitic phase has greater resistance, and that an  $\epsilon$  phase is less resistant than martensite. All purely nitrous phases are less resistant than carbon martensite. Nitriding at 775°C of a specimen that had been subjected to cementation does not increase resistance to W. The high-nitrogen  $\epsilon$  phase and nitrous martensite are more corrosion-resistant in 3% NaCl than are ferrite and carbon martensite.

A.B.

Card 1/1

SOV/137-57-11-21880

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 171 (USSR)

AUTHOR: Smirnov, A. V.

TITLE: Tables of Thermodynamic Functions of Reactions Occurring During Chemical and Heat Treatment of Steel (Tablitsy termodinamicheskikh funktsiy dlya reaktsiy, vstrechayushchikhsya pri khimiko-termicheskoy obrabotke stali)

PERIODICAL: Tr. Leningr. in-ta aviats. priborostr. 1957, Nr 22, pp 33-77

ABSTRACT: The author outlines the procedures for computation of variations of isobaric-isothermal potential as a function of the temperature ( $\Delta Z_T^0$ ) of constant-pressure reactions; the computational procedures cover conditions when all necessary data (variations of heat capacity depending on the temperature, changes in heat content, and the standard isobaric-isothermal potential,  $\Delta Z_{298}^0$ ) may be obtained from handbooks, as well as instances when some of the information is not available. Values of coefficients ( $\Delta H_0$ ,  $-2.3\Delta a$ ,  $-\frac{1}{2}\Delta b \cdot 10^3$ ,  $-\frac{1}{6}\Delta c \cdot 10^6$ , and  $I$ ) from the formula

Card 1/2  $\Delta Z_T^0 = \Delta H_0 - 2.3 \Delta a T \log_{10} T - \frac{1}{2} \Delta b T^2 - \frac{1}{6} \Delta c T^3 + IT$

SOV/137-57-11-21880

Tables of Thermodynamic Functions (cont.)

are computed and tabulated for 266 separate reactions occurring during chemical and heat treatment of steel; auxiliary tables of thermodynamic functions of elements and simple substances permit calculating the values of these coefficients and determine the magnitude of the  $\Delta Z_T^0$ .

A. S.

Card 2/2

Smirnov, A. V.

129-58-5-13/17

AUTHORS: Semenkovich, S.A., Candidate of Technical Sciences and  
Smirnov, A. V., Doctor of Technical Sciences

TITLE: Alitizing of Iron by Vapours of Aluminum Monochloride  
(Alitirovaniye zheleza parami monokhlorida alyuminiya)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 5,  
pp 48-51 (USSR)

ABSTRACT: The authors calculated the changes of the standard isobaric-isothermal potential  $\Delta Z_T^0$  of the reactions taking place during alitizing of iron using data relating to the changes of  $\Delta Z_T^0$  between 600 and 1200°C which were published by Fichte, R. (Ref.3). On the basis of thermodynamic analysis it is concluded that for alitizing it is advisable to obtain AlCl compounds at temperatures above 970°C and for separating aluminium in accordance with the reaction expressed by Eq.(5), p.49, the temperature should be kept below 970°C, whilst the reaction of the alitizing proper can proceed at 1150°C. The authors also give the experimentally observed results on the interaction between iron and vapours of aluminium monochloride; "technical" iron of 8 mm dia, 30 mm long was subjected to the effect of AlCl vapours at 700-800 and at 950-970°C for a duration of one hour.

Card 1/2

Alitizing of Iron by Vapours of Aluminum Monochloride 129-58-5-13/17

It was found that a hard, scale-resistant surface layer forms if the alitizing process is effected in the temperature range 950 to 1000°C; the strength of this coating is attributed to the formation of the inter-metallic compound  $\text{Fe}_2\text{Al}$ . If the alitizing temperature is higher, a less hard layer forms which appears to be a eutectic mixture of the phases  $\text{FeAl}_5$  and  $\text{FeAl}_3$ . There are 1 figure and 12 references, 6 of which are Soviet, 3 German and 3 English.

AVAILABLE: Library of Congress.

Card 2/2 1. Aluminum coatings-Test results 2. Iron-Aluminum coatings  
3. Aluminum monochloride-Applications

PHASE I BOOK EXPLOITATION

SOV/5837

Smirnov, Aleksandr Vasil'yevich, Doctor of Technical Sciences, and Lev Vladimirovich Beloruchev, Candidate of Technical Sciences

Kontroliruyemye atmosfery i ikh primeneniye dlya termicheskoy i khimiko-termicheskoy obrabotki metallov; obzor (Controlled Atmospheres and Their Use in Heat and Thermochemical Treatment of Metals; Survey) Leningrad, 1960. 74 p. (Series: Leningradskiy Dom nauchno-tekhnicheskoy propagandy. Seriya: Metallovedeniye i termicheskaya obrabotka). Errata slip inserted. 5500 copies printed.

Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR. NTO Mashprom Leningradskoye oblastnoye pravleniye. Leningradskiy Dom nauchno-tekhnicheskoy propagandy. Sektsiya metallovedeniya i termicheskoy obrabotki.

Ed.: A. D. Nachinkov; Ed. of Publishing House: V. A. Shilling; Tech. Ed.: M. M. Kubneva.

PURPOSE: This booklet is intended for technical personnel concerned with the use of controlled atmospheres in the heat treatment of metals.

Card 1/2

18.7500

78127  
SOV/129-60-3-6/16

AUTHORS: Smirnov, A. V. (Doctor of Technical Sciences, Professor),  
Nachinkov, A. D. (Engineer)

TITLE: Surface Strengthening of Titanium by Methods of Chemical-  
Thermal Treatment

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,  
1960, Nr 3, pp 22-29 (USSR)

ABSTRACT: This is a description of an investigation prompted by  
the unsatisfactory wear resistance of titanium and the  
necessity of its surface strengthening. The present  
work considers the possibilities and the results of  
surface strengthening of titanium and contemplates the  
future work in this direction. The phase composition  
of the strengthened surface; oxidation of titanium;  
nitriding of titanium; case hardening and cyaniding of  
titanium; and boron treatment of titanium were studied  
and described. The work of G. A. Meyerson and M. P.  
Smirnov was mentioned. The authors arrived at the  
following conclusions: (1) The industrial

Card 1/3

Surface Strengthening of Titanium by  
Methods of Chemical-Thermal Treatment

78107  
SOV/129-60-3-6/16

The most recent U.S. and U.K. references are: Lenning, G. A., Graighead, C. M., Jaffe, R. I., Journal of Metals, 6, 1954; Watt, J., Grant, N., TASM, 46, 1954; Iron Age, 173, 1954; Hausen, R., Metal Progress, 65, 1954; Wasilewski, R. I., Kehl, Metallurgiya, 50, 1954; Wasilewski, R. I., Kehl, G. L., Journal Inst. Met., 83, 1954.

Card 3/3

SLAVINA, N.P.; SMIRNOV, A.V.

Measuring hardness at high temperatures. Izv.tekh.no.4:14-16 Ap '61.  
(MIRA 14:3)

(Hardness—Measurement)

BALTER, Mariya Aronovna, kand. tekhn. nauk; SMIRNOV, A.V., red.;  
FOMICHEV, A.G., red. izd-va; BOL'SHAKOV, V.A., tekhn. red.

[Prolonging the life of machine parts] Puti povysheniia dolgovech-  
nosti detalei mashin; stenogramma lektsii, pročitannoi v LDNTP na  
zaniatii seminarapo metallovedeniiu i termicheskoi obrabotke.  
Leningrad, 1962. 29 p. (MIRA 15:6)  
(Heat treatment) (Protective coating)

SHIRNOV, A. V.

32550. SHIRNOV, I. I. i SHIRNOV, A. V. S'yennaya pogryzochnaya strela na traktore  
ET-11. Les. Pes. Prom-st', 1948, No 9, s. 15-16

SC: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

SMIRNOV, A. V.

Dissertation: "Natural Restoration of Siberian Cedar in the Lake Baykal Area."  
Cand Agr Sci, Inst of Forestry, Acad Sci USSR, Moscow, Oct-Dec 53. (Vestnik  
Akademii Nauk, Moscow, Jun 54)

SO: SUM 318, 23 Dec 1954

SMIRNOV, A.V.

~~SMIRNOV, A.V.~~  
Cedar groves in the Baikal region. Priroda 42 no.11:113-114 N '53.  
(MIRA 6:11)

1. Vostochno-Sibirskiy filial Akademii nauk SSSR.  
(Baikal, Lake, region--Rhododendron) (Rhododendron--Baikal, Lake, region)

USSR / Forestry. Biology and Typology of the Forest. K-2

Abs Jour: Ref Zhur - Biologiya, No. 1, 1958, 1318

Author : Smirnov, A.V.

Inst : Eastern Siberian Branch of the Acad Sci USSR

Title : The Appearance of the Siberian Cedar in Several  
Types of Pine Forests of the Priбайкалье

Orig Pub: Tr. Vost.-Sib. fil. Akad. Nauk SSSR, 1957,  
No. 5, 54-60

Abstract: The appearance of a growth of cedar under a  
pine canopy has been noted in mossy and varied-  
grass pine forests in the zone of contact be-  
tween stands of pine and of cedar, sometimes at  
a distance of 10-15 km. from the body of cedars;  
this can be explained only by transport of the  
cedar seeds by the Nutcracker *Nucifraga Cary-*  
*oactes*/. Forming 0.6-0.7 of the young plants,

Card 1/2

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651520001-0"

USSR / Forestry. Biology and Typology of the Forest. K-2

Abs Jour: Ref Zhur - Biologiya, No. 1, 1958, 1318

the cedars grow faster and higher than the pines,  
thanks to their greater shade resistance and to  
conditions less favorable to the growth of pines.  
It is supposed that on mountain pine-green moss  
areas the cedar will slowly squeeze out the pine  
whose reforestation is difficult on a moss cover.

Card 2/2

COUNTRY: USSR  
 CATEGORY: Forestry . General Problems.  
 ARS. JOUR.: Ref Zhur-Biologiya, No.1, 1959, No. 1434  
 AUTHOR: Smirnov, A.V.  
 INST.: Eastern Affiliated Academy of Sciences USSR  
 TITLE: High-Mountain Cedar Forests of the Region  
 Near Baykal.

ORIG. PUB.: Izv. Vost. fil. AN SSSR, 1957, No.10,  
 122-129

ABSTRACT: In Khamar-Daban and in the eastern Sayan  
 ( upper part of the Uda river) rhododendron  
 ( with Rhododendron aureum) and mossy-lichenic  
 cedar groves of IV, V and VI locality classes oc-  
 cur. They are situated at 1400-1800 m. elevation,  
 along slopes of 4 to 20° and less frequently to  
 35°, reach an age of 300 to 400 years with  
 trunk diameter to 100 cm. and stand density  
 of 50 to 200 trees per 1 hectare. The best  
 restoration ( 6400 plants in 1 hectare) occurs in

CARD: 1/2

SMIRNOV, Aleksey Vsevolodovich; SMIRNOVA, Mara Valerianovna; SHAFIROVA,  
A.S., red.; PECHERSKAYA, T.I., tekhn.red.

[Gifts from the green ocean] Dary zelenogo okeana. Irkutsk,  
Irkutskoe knizhnoe izd-vo, 1959. 109 p. (MIRA 14:1)  
(Siberia--Forests and forestry)

LAPIROV-SKOBLO, Samuil Yakovlevich, prof., doktor sel'skokhoz.nauk.  
Prinimal uchastiye SMIRNOV, A.V., kand.tekhn.nauk. SUDNITSYN,  
I.I., dotsent, retsenzent; SHUKLIN, A.V., red.; SHAKHOVA, L.I.,  
red.izd-va; PARAKHINA, N.L., tekhn.red.

[Forest products; a commercial guide] Lesnoe tovarovedenie.  
Izd.2., perer. i dop. Moskva, Goslesbumizdat, 1959. 435 p.  
(MIRA 13:4)

(Forest products)